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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,085	03/27/2006	George C. Zguris	2009018-0032	2471

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EXAMINER	
MEKHLIN, ELI S	

ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
09/15/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/561,085	ZGURIS, GEORGE C.	
	Examiner	Art Unit	
	ELI S. MEKHLIN	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33-35 and 39-75* is/are pending in the application.

4a) Of the above claim(s) *1-32 and 76-78* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-35 and 39-75* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

(1)

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 15, 2010, has been entered.

In this submission, Applicant amended claims 33 and 51, cancelled claims 36-38 and added claims 66-75. Claims 33-35 and 39-75 are pending before the Office for review. Claims 1-32 have been previously withdrawn. No new matter has been entered.

(2)

Election/Restrictions

Newly submitted claims 76-78 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the claims are directed to a battery and does not share a special technical feature with the process claims, as described in the Office Actions dated June 17, 2009 and September 25, 2009.

Since Applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for

prosecution on the merits. Accordingly, claims 76-78 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

(3)

Response to Arguments

Applicant's arguments with respect to claims 33-35 and 39-75 have been considered but are moot in view of the new ground(s) of rejection.

(4)

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 33-34, 39-45, 51-53, 55-60 and 66-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Shinoda et al. (U.S. Patent No. 5,376,480).

With respect to **claim 33**, Holland teaches a high-capacity lead battery. Abstract. Holland further teaches that the battery is constructed by placing a fibrous material in a battery case and combining the fibrous material with an electrolyte. Col. 4, Lines 1-10. The fibrous material extends along the space between the plurality of electrode plates and the separator and the case, meaning that the fibrous material extends between the battery's electrodes. Figure 1 and Col. 4, Lines 1-10. Holland teaches that the fibrous material is placed in the battery to absorb electrolyte. Abstract.

Although Holland teaches that the battery manufacturing process uses a fibrous material, Holland is silent as to whether the fibrous material can be in fiber form.

However, Shinoda, which deals with battery production, teaches that fibers can be disposed in the battery electrolyte to improve the impact resistance of the battery. Abstract. Additionally, Shinoda teaches that the fibers, in fiber form, absorb electrolyte, which is consistent with the reason why Holland uses fibrous material. Col. 3, Lines 54-55.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use the fibrous material taught by Holland in fiber form, as taught by Shinoda, because Shinoda teaches that do so improves the durability of the battery while also acting as an electrolyte absorbent.

Additionally, a person having ordinary skill in the art at the time of invention would have appreciated that the combination of Holland and Shinoda involves the simple substitution of one known element for another to obtain predictable results. Specifically, Holland, as described above, teaches a battery comprising electrolyte and a fibrous material between plates wherein the fibrous material is in a mat. This is a prior art device that differs from the claimed device because it lacks fibrous material in fiber form. Shinoda teaches disposing fibrous material in fiber form in a battery electrolyte, meaning the substituted component was known in the art. Holland and Shinoda both teach that the fibrous material is beneficial because it absorbs electrolyte. A person having ordinary skill in the art at the time of invention would have appreciated that using the fibrous material in fiber form, as taught by Shinoda, could be accomplished by

simply substituting such a material for the fibrous mat used by Holland with substitution predictably yielding a battery comprising fiber in fiber form wherein the fiber acts as an electrolyte absorbent.

With respect to **claim 34**, Holland teaches that the electrolyte comprises sulfuric acid. Col. 3, Lines 60-64.

With respect to **claim 39**, a person having ordinary skill in the art at the time of invention would have appreciated that when a case is filly with electrolyte, the case is substantially devoid of electrolyte before a first amount of electrolyte is added to the case.

With respect to **claim 40**, Holland further teaches that the battery comprises a plurality of positive and negative electrode plates that are arranged with a separator disposed between a pair of a positive electrode and a negative electrode. Col. 3, Lines 51-55.

With respect to **claim 41**, Holland and Shinoda, as combined above, teach that some of the fibrous material (22), in fiber form, is disposed between the cell group (1) and the battery case cover (11). Holland, Figure 1 and Shinoda, Abstract.

With respect to **claim 42**, Holland and Shinoda, as combined above, teach that the battery has a space (fringe volume) between the case and the cell and that the fibrous material (22), in fiber form, is disposed in the space (fringe volume). Holland, Figure 1 and Shinoda, Abstract.

With respect to **claim 43**, Holland teaches that the fibrous material is added around the cell, meaning that the cell is constructed before the fibrous material is disposed within the case. Col. 4, Lines 1-10.

With respect to **claim 44**, Holland and Shinoda, as combined above, are silent as to whether the cell is constructed before the electrolyte is disposed within the case or vice versa. However, a person having ordinary skill in the art at the time of invention would have appreciated that, since the electrolyte is an acid-containing fluid, it would have been easier and safer to construct the cell in the case before the electrolyte is added because doing so avoids the potential for acid exposure. Additionally, as discussed above, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and cell are both added to the battery case, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 45**, Holland teaches that the battery can be a lead-acid battery. Col. 1, Lines 6-8, Col. 3, Lines 60-64.

With respect to **claim 51**, Holland and Shinoda, as combined above, teach a process for manufacturing a battery wherein a battery having a case comprise a plurality of anode and cathode plates separated by a separator with a fibrous material, in fiber form, disposed in the case and between the plates. Holland, Col. 4, Lines 1-10 and Figure 1 and Shinoda, Abstract and Col. 3, Lines 54-55.

With respect to **claim 52**, Holland teaches that an electrolyte is disposed within the case. Col. 4, Lines 1-10.

With respect to **claim 53**, Holland teaches that the electrolyte comprises sulfuric acid. Col. 3, Lines 60-64.

With respect to **claims 55 and 56**, Holland teaches that the electrolyte is disposed in the case before the fibrous material is disposed in the case. Col. 4, Lines 1-10. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland teaches that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 57**, a person having ordinary skill in the art at the time of invention would have appreciated that when a battery case is filled with electrolyte, the case is substantially devoid of any electrolyte before the electrolyte is added to the case.

With respect to **claim 58**, Holland and Shinoda, as combined above, teach that some of the fibrous material (22), in fiber form, is disposed between the cell group (1) and the battery case cover (11). Holland, Figure 1 and Shinoda, Abstract.

With respect to **claim 59**, Holland and Shinoda, as combined above, teach that the battery has a space (fringe volume) between the case and the cell and that the fibrous material (22), in fiber form, is disposed in the space (fringe volume). Holland, Figure 1 and Shinoda, Abstract.

With respect to **claim 60**, Holland teaches that the battery can be a lead-acid battery. Col. 1, Lines 6-8, Col. 3, Lines 60-64.

With respect to **claim 66**, Holland and Shinoda, as combined above, teach a process for manufacturing a battery wherein fibrous material, in fiber form, is disposed within a battery case followed by the addition of electrolyte. Holland, Figure 1 and Col. 4, Lines 1-10 and Shinoda, Abstract and Col. 3, Lines 54-55. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland and Shinoda, as combined above, teach that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 67**, Holland and Shinoda, as combined above, teach a process of manufacturing a battery wherein an electrolyte, fibrous material, in fiber form, and a plurality of electrode plates are added to a battery case. Holland, Figure 1 and Col. 4, Lines 1-10 and Shinoda, Abstract and Col. 3, Lines 54-55. The fibrous material is located between the battery electrodes. Holland, Figure 1 and Col. 4, Lines 1-10 and Shinoda, Abstract and Col. 3, Lines 54-55. Additionally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland and Shinoda, as combined above, teach that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

With respect to **claim 68**, Holland further teaches that the cell comprises a plurality of separators arranged between the pluralities of plates such that for each anode and cathode pair a separator is placed there between. Holland, Figure 1 and Col. 3, Lines 50-55.

With respect to **claim 69**, Holland and Shinoda, as combined above, teach a process of manufacturing a battery wherein an electrolyte, fibrous material, in fiber form, and a plurality of electrode plates are added to a battery case. Holland, Figure 1 and Col. 4, Lines 1-10 and Shinoda, Abstract and Col. 3, Lines 54-55. The fibrous material is located between the battery electrodes. Holland, Figure 1 and Col. 4, Lines 1-10 and Shinoda, Abstract and Col. 3, Lines 54-55. Holland further teaches that the cell comprises a plurality of separators arranged between the pluralities of plates such that for each anode and cathode pair a separator is placed there between. Holland, Figure 1 and Col. 3, Lines 50-55. Finally, as per the MPEP, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. MPEP 2144(IV)(C). Accordingly, because Holland and Shinoda, as combined above, teach that the electrolyte and fibrous material are both added to the battery, the order in which the components are added is not patentably distinct absent evidence of new or unexpected results.

(5)

Claims 35, 46, 54 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Shinoda et al.

(U.S. Patent No. 5,376,480), as applied to claims 33-34, 39-45, 51-53, 55-60 and 66-69, above, and further in view of Inagaki et al. (U.S. Patent No. 6,150,056).

With respect to **claims 35 and 54**, Holland and Shinoda, as combined above, teach that the electrolyte comprises sulfuric acid but are silent as to whether the electrolyte can comprise potassium hydroxide.

However, Inagaki, which deals with battery design, teaches that potassium hydroxide can be used as an electrolyte in a battery to help produce a battery with increased energy capacity. Col. 2, Lines 43-48, Col. 6, Lines 41-46.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention that potassium hydroxide could also be used in the electrolyte taught by Holland and Shinoda, as combined above, because Inagaki teaches that potassium hydroxide can be used as an electrolyte in the production of batteries with increased capacity.

With respect to **claims 46 and 61**, Inagaki teaches that potassium hydroxide electrolyte can be used in a nickel-metal hydride battery. Col. 6, Lines 46-49.

(6)

Claims 47-50, 62-65 and 70-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Shinoda et al. (U.S. Patent No. 5,376,480), as applied to claims 33-34, 39-45, 51-53, 55-60 and 66-69, above, and further in view of Reher et al. (U.S. Publication No. 2003/0182972).

With respect to **claims 47 and 62**, Holland and Shinoda, as combined above, teach that the fibrous material in fiber form can be polyester but are silent as to whether the fiber can comprise a siliceous material.

However, Reher, which deals with the use of fibrous material in a battery, teaches that fibers in a battery can comprise siliceous material. Paragraph 51.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use siliceous fibers because Reher teaches that such fibers can be used in batteries.

Additionally, a person having ordinary skill in the art at the time of invention would have appreciated that the combination of Holland, Shinoda and Reher is the simple substitution of one known element for another to obtain predictable results.

Holland and Shinoda teach a prior at base device wherein a fibrous material in fiber form is added to a battery case and used to absorb electrolyte. Reher, which deals with the use of fibrous material in batteries, teaches that the fibers in a fibrous material can be siliceous. A person having ordinary skill in the art at the time of invention would have appreciated that the fibers used by Reher could be substituted into the configuration taught by Holland and Shinoda to predictably construct a battery comprising a fibrous material in fiber form wherein the fibers comprise siliceous material.

With respect to **claims 48 and 63**, Reher teaches that the glass giber can have an average length of 0.1 mm to 1.5 mm. Paragraph 53.

With respect to **claims 49 and 64**, Reher teaches that the glass giber can have an average length of 0.1 mm to 1.5 mm. Paragraph 53.

With respect to **claims 50 and 65**, Reher teaches that the fibers have an average aspect ratio of less than 1,500. Paragraph 63.

With respect to **claims 70-75**, Reher teaches that at least 5 weight percent of the glass fibers pass through a 4x4 mesh shake test before they are used in a lead acid battery. Paragraph 59. Additionally, as per the MPEP, "where the only difference between the prior art and the claims [is] a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device [is] not patentably distinct from the prior art device. MPEP 2144.04(IV)(A).

(7)

Claims 47, 49, 62, 64 and 70-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Shinoda et al. (U.S. Patent No. 5,376,480), as applied to claims 33-34, 39-45, 51-53, 55-60 and 66-69, above, and further in view of Zguris (U.S. Patent No. 6,306,539).

With respect to **claims 47 and 62**, Holland and Shinoda, as combined above, teach that the fibrous material in fiber form can be polyester but are silent as to whether the fiber can comprise a siliceous material.

However, Zguris, which deals with the use of fibrous material in a battery, teaches that fibers in a battery can comprise siliceous material. Col. 18, Lines 45-47.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use siliceous fibers because Reher teaches that such fibers can be used in batteries.

Additionally, a person having ordinary skill in the art at the time of invention would have appreciated that the combination of Holland, Shinoda and Zguris is the simple substitution of one known element for another to obtain predictable results.

Holland and Shinoda teach a prior at base device wherein a fibrous material in fiber form is added to a battery case and used to absorb electrolyte. Zguris, which deals with the use of fibrous material in batteries, teaches that the fibers in a fibrous material can be siliceous. A person having ordinary skill in the art at the time of invention would have appreciated that the fibers used by Zguris could be substituted into the configuration taught by Holland and Shinoda to predictably construct a battery comprising a fibrous material in fiber form wherein the fibers comprise siliceous material.

With respect to **claims 49 and 64**, Holland, Shinoda and Zguris, as combined above, teach that the fibers have a diameter of 0.8 microns. Zguris, Col. 12, Lines 4-9.

With respect to **claims 70-75**, Holland, Shinoda and Zguris, as combined above, teach that glass fibers that are used as fibrous material in batteries have an average diameter of 0.8 microns. Zguris, Col. 12, Lines 4-9. A 4x4 mesh shake test passes fibers through a mesh with a diameter of 4.69 millimeters, which is the equivalent of 4,690 microns. Based on this disclosure, a person having ordinary skill in the art at the time of invention would have appreciated that approximately 100% of glass fibers with a

average diameter size of 0.8 microns is capable of passing through a 4x4 mesh shake test because the size of the diameter in the mesh is significantly larger than the average diameter of the glass fibers. Accordingly, at some point prior to being combined with electrolyte, 100% of the glass fibers taught by Zguris are capable of being passed through the 4x4 mesh shake test.

(8)

Claims 48, 50, 63 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holland et al. (U.S. Patent No. 5,468,575) in view of Shinoda et al. (U.S. Patent No. 5,376,480) and Zguris (U.S. Patent No. 6,306,539) as applied to claims 47, 49, 62, 64 and 70-75 above, and further in view of Cusick et al. (U.S. Patent No. 6,227,009).

With respect to **claims 48 and 63**, Holland, Shinoda and Zguris, as combined above, teach that the fibers in the fibrous material, which is in fiber form, have a diameter of 0.8 microns but are silent as to the length of the fibers.

However, Cusick, which deals with fibrous material for use in lead-acid batteries, teaches that glass fibers with a length of 1 millimeters can be in lead-acid batteries. Col. 14, Lines 35-37.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of invention to use a fiber with a length of 1 millimeters in the battery taught by Holland, Shinoda and Zguris, as combined above, because Cusick teaches that fibers of that length can be effectively used in lead-acid batteries.

With respect to **claims 50 and 65**, Holland, Shinoda, Zguris and Cusick, as combined above, teach that the glass fibers have an average diameter of 0.8 microns and an average length of 1.0 millimeters. This means that the fibers have an average aspect ratio of 1250, which is less than 1,500.

(9)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELI S. MEKHLIN whose telephone number is (571)270-7597. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer K. Michener can be reached on 571-272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ELI S MEKHLIN/
Examiner, Art Unit 1795

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